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21. (New) A method of modulating costimulation of human T lymphocytes comprising: contacting a human T lymphocyte with an 8F4 modulator selected from the group consisting of an 8F4 polypeptide and a monoclonal antibody that recognizes a human 8F4 polypeptide, wherein said 8F4 polypeptide:

- a) is an inducible T cell costimulatory molecule;
- b) occurs on two-signal-activated human T lymphocytes;
- c) exhibits a molecular weight of about 55 to 60 kilodaltons as determined by non-reducing sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE); and
- d) is a dimer of two peptide chains exhibiting molecular weights of about 27 kilodaltons and 29 kilodaltons, as measured by reducing SDS-PAGE, such that costimulation of the human T lymphocyte is modulated.

22. (New) The method of claim 21, wherein the costimulation of human T lymphocytes is inhibited.

23. (New) The method of claim 21, wherein the 8F4 modulator is a monoclonal antibody that recognizes a human 8F4 polypeptide.

24. (New) The method of claim 22, wherein the 8F4 modulator is a monoclonal antibody that recognizes a human 8F4 polypeptide.

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25. (New) The method of claim 23 or 24, wherein the monoclonal antibody recognizes the human 8F4 polypeptide of about 55 kilodaltons to 60 kilodaltons, as determined by non-reducing SDS-PAGE.

26. (New) The method of claim 23 or 24, wherein the monoclonal antibody recognizes the peptide chain of about 27 kilodaltons, as determined by reducing SDS-PAGE.

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27. (New) The method of claim 23 or 24, wherein the monoclonal antibody recognizes the peptide chain of about 29 kilodaltons, as determined by reducing SDS-PAGE.

28. (New) The method of claim 23 or 24, wherein the monoclonal antibody recognizes a human 8F4 polypeptide present on activated human CD4⁺ T lymphocytes and activated human CD8⁺ T lymphocytes.

29. (New) The method of claim 21 or 22, wherein the 8F4 modulator is an 8F4 polypeptide.

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30. (New) A method of inhibiting rejection of an organ transplant, comprising: administering to an individual in need of such inhibition an 8F4 inhibitory molecule selected from the group consisting of an 8F4 polypeptide and a monoclonal antibody that recognizes a human 8F4 polypeptide, wherein said 8F4 polypeptide:

- a) is an inducible T cell costimulatory molecule;
 - b) occurs on two-signal-activated human T lymphocytes;
 - c) exhibits a molecular weight of about 55 to 60 kilodaltons as determined by non-reducing sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE); and
 - d) is a dimer of two peptide chains exhibiting molecular weights of about 27 kilodaltons and 29 kilodaltons, as measured by reducing SDS-PAGE,
- in an amount sufficient to inhibit rejection of an organ transplant.

31. (New) The method of claim 30, wherein the 8F4 inhibitory molecule is a monoclonal antibody that recognizes a human 8F4 polypeptide.

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32. (New) The method of claim 31, wherein the monoclonal antibody recognizes the human 8F4 polypeptide of about 55 kilodaltons to 60 kilodaltons, as determined by non-reducing SDS-PAGE.